**Botanical Resources Guidance Document**

**Goal:**

This guidance document is directed toward Registered Professional Forester (RPFs) to provide additional information about what the California Department of Forestry and Fire Protection (CAL FIRE) and the review team agencies may need to properly evaluate the potential impacts of timber operations on botanical resources. The intended outcome of this guidance is to create clear direction for applicants, reduce review time for agency staff, reduce the likelihood of significant effects to botanical resources, and enable flexible management for resources. This document’s guidance is not mandatory nor intended to have regulatory effect.

The guidance is intended to supplement related previous guidance developed by CAL FIRE and the California Department of Fish and Wildlife (CDFW), and to provide assistance when confronting areas of inconsistency with guidance documents prepared by other agencies.

# Introduction

## Purpose of Guidance Document

In 2018 CDFW submitted a comment letter requesting new regulations (Forest Practice Rules) for scoping, mitigation, and management practices for botanical resources on timberlands. While not regulatory, this guidance document responds to this request with the intention of supporting clear direction, planning efficiencies, flexible management, and species conservation.

##  Definitions

### Special Status Plant Species

* + Includes, but not limited to: (1) listed (or proposed for listing) as endangered or threatened under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA); (2) listed as rare or endangered under the California Native Plant Protection Act (CNPPA); (3) plants that satisfy the criteria of Guideline §15380, including unlisted plants that satisfy Guideline §15380(d); (4) Board Sensitive Species; (5) species protected by Natural Community Conservation Plans (NCCPs).

### Project Scoping for Special Status Plant Species

* + Scoping for botanical resources is a process that often involves the identification of special status plant species known to occur in the plan area (i.e., timber operations) and those which may have potential to occur in the plan area.

### Natural Communities

* + Natural communities are vegetation types classified using the best means possible, typically the Manual of California Vegetation or other regional mapping reports. Each natural community is assigned a rarity ranking (with S1-S3 being considered sensitive) and as the State continues its mapping effort, new natural communities are described and rankings for existing communities are updated.

# Scoping

## Identification of Scoping Area

* Scoping areas should be of sufficient size to assure that all special status plant species and mapped sensitive natural communities with known or potential occurrence in the plan area are assessed.
* RPFs should define the scoping area. The USGS 7.5’ quadrangle is the geographic basis for the California Natural Diversity Database (CNDDB). A nine-quad search or greater, if appropriate, may be a useful tool to capture variability in plant distributions across the landscape.
	+ A biologically justified alternative to the nine-quad search may include scoping for plants with potential to occur within the ecoregion, habitats, and elevation range (plus buffer) of the plan area.
* To address the variety of environmental conditions upon which special status plant species may be dependent, the scoping area should reflect appropriate RPF consideration of relevant areas such as areas within a similar elevation range and ecoregion, areas within a certain distance of the plan area, quad maps, or adjacent planning watersheds. CDFW recommends a scoping area consistent with the most recent “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities” developed by CDFW.

## Development of Scoping & Survey Lists

### Scoping Lists

* + All plans should have a scoping list that assesses special status plant species with potential to be impacted by timber operations. Scoping lists should be drawn from special status species known to occur in a geographic area of adequate size to evaluate the potential impacts of the plan. Species names and special status ranking should be correct and current. Species identified on the scoping list that are determined to not have potential to occur in the plan area can be removed from the survey list (see 2.2.2) after providing a justification based on species biology, habitats present in the impacted area, and /or species known range. Scoping may also reveal mapped sensitive natural communities in the plan area.
		- Providing scoping lists early in the process reduces the back-and-forth communications that can occur later in the plan development and review which often delay submission or operations.
		- CDFW can review draft scoping lists compiled by RPFs.
	+ In addition to state and federal agency lists for rare, endangered, or threatened species, examples of appropriate informational resources that can be used in the scoping and evaluation process can be found in the Appendix of this document. Other site-specific resources can include: prior botanical surveys; local Natural Community Conservation Plans or Habitat Conservation Plans; environmental review documents for projects in the vicinity; and reports, studies, and similar documents prepared by academic institutions or professional organizations.

### Survey list

* + After a scoping list is compiled, potential special-status species should be evaluated to generate a survey list. If a species has potential to occur in the plan area or potential habitat for the species occurs in the plan area, the species should be included on the survey list. Biological justification of likelihood that a species occurs in the plan area may be based on habitat conditions in the plan area (biotic and abiotic), previous species records, and life history.
	+ A discussion of the relevant habitat and life history; the availability, quality, and quantity of habitat within the plan area; and whether the species is present or potentially present should be used to determine survey window, survey necessity, and potential avoidance and minimization measures.
	+ If a species on the scoping list is significantly outside of its known geographic range or does not have appropriate habitat within the plan area, it does not need to be included on the survey list. Information indicating why that species does not qualify for the survey list or is judged unlikely to occur in the plan area, along with any relevant data or site-specific information, should be recorded. This will facilitate agency review and expedite overall plan review processes.

## Identifying Unlisted Special Status Plant Species Under Guideline §15380(d)

* Review team agencies should rely on all available information when conclusively establishing a plant species as being rare, threatened, or endangered for purposes of CEQA review pursuant to Guideline §15380(d).
	+ CEQA Guideline §15380(d) states that nonlisted species “shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the criteria” in the guideline’s definition.
		- Factors that may be relevant to an RPF’s determination of whether nonlisted plant species should be disclosed and analyzed in the plan as rare, threatened, or endangered include, but are not limited to: number of reported populations, population size, degree of phylogenetic isolation of the species, degree of habitat specialization, and population size within the plan area. Considering these factors during species assessments may serve to preserve the genetic diversity of species, making it more likely that they will survive changes in the environment.

# Botanical Surveys

## Determining if a Survey is Required

### Consult with CDFW

* + Pre-consultation with CDFW may help CAL FIRE determine if the survey or information submitted with the plan is sufficient to make an accurate evaluation of potential impacts.
		- Botanical scoping pre-consultation will involve an evaluation of the scoping and survey lists, including: species included on the lists, appropriate scoping area, and assessed likelihood of species presence.
		- Plans should include biological justification for why species contained on the scoping list were determined not to have potential to occur in the plan area and thus not included on the survey list.

### Use of Prior Surveys for Plan Area

* + In some cases, prior botanical surveys may be sufficiently recent and comprehensive to support the RPF’s determination that it is unnecessary to repeat survey efforts.
	+ Pre-consultation with CDFW may help determine if past scoping or surveys are appropriate for use and when scoping or surveys may need to be redone based on the time elapsed since or scope of the original survey, changes to habitat through natural processes or forest management practices, climatic influences, or other relevant factors.

### Avoidance and Good Design Can Affect Need for Some Analysis

* + Project design, avoidance, and additional measures may reduce the need for surveys.
		- Examples of common avoidance and minimization strategies that can be incorporated into the plan’s project design include (1) avoiding timber operations, or establishing appropriate buffer zones, near previously identified populations of special status plant species; (2) establishing equipment exclusion or limitations zones; (3) directional felling of trees away from populations or potential habitat; (4) seasonal avoidance, such as during the growth and fruiting season; (5) use of Habitat Conservation Plans in lieu of a series of independent plans; (6) Watercourse and Lake Protection Zone (WLPZ) measures for riparian and wetland species when the location of such species is known; (7) the exclusion of timber operations from appropriate habitat for serpentine barren, meadow, and cliff species; (8) retaining overstory canopy for shade dependent species; and (9) the exclusion of site preparation or herbicide application near habitat for special status plant species.

## How to conduct a quality survey

### Survey Scope and Timing

* + Timing of botanical surveys should be consistent with the biology of the targeted species and timed to coincide with the appropriate phenological period of the targeted species, which is typically the blooming period. Surveys may need to be repeated if performed outside the appropriate timeframe.
		- Planning survey and field visit dates to overlap with the bloom period of special status plant species can help ensure the species will be identifiable if observed. If the timing of the bloom period is in question, consider visiting known populations to confirm bloom status and to get an accurate search image for the plant.
		- Communication with CDFW on final survey list and timing of surveys will assist in determining if sufficient information is presented in the plan.
	+ Surveys may be necessary when the scoping process reveals potential for special-status species to occur in areas that will be impacted by plan activities, and/or sufficient preemptive avoidance measures are not incorporated into the plan.

### Surveyor Qualifications

* + Surveyors should have appropriate botanical education, knowledge, and experience.
		- The survey should be performed by someone with appropriate botanical education, knowledge, and experience. RPFs who possess the requisite expertise may perform their own botanical surveys, consistent with their professional obligations under PRC § 752(b) to perform only those services for which they have expertise. Where the RPF is unable to demonstrate the requisite level of expertise they should engage the services of a botanist or other qualified expert.
		- To be qualified, an RPF or botanist would 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities” (current version dated March 20, 2018), or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor, 4) be familiar with the *California Manual of Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/), and 5) be familiar with federal, state, and local statutes and regulations related to plants and plant collecting.

### Survey Elements and Reporting

* + Surveys should be methodical and systematic to ensure that results are thorough and complete for areas where impacts may occur from timber operations.
	+ The botanical report may include a map or thorough description of the area surveyed, dates of the surveys, names and qualifications of the surveyors, description of habitats observed, notes on the yearly climatic conditions, list of species observed during the surveys, etc.
	+ If special status plant species are found in the area, a thorough evaluation of the population size, habitat, and boundaries can provide information necessary to design effective means of protecting the population.
	+ Providing data on special status plant populations to CNDDB (via CNDDB forms) aids in the ongoing assessment of the rare plant ranking of the species, and has previously resulted in some species being removed from the special status plant list.
	+ Including notes on visits to known populations outside the plan area in survey reports may provide supporting evidence for the efficacy of the survey.
	+ If the scoping process revealed already mapped sensitive natural communities, the report may reference relevant protection measures from the Forest Practice Rules.

### Timing of Surveys Relative to Plan Submittal

* + Botanical surveys are most helpful if submitted at the time of Plan review.
	+ If a survey is not completed prior to submittal of the plan, default protection measures that will apply if a special status plant is detected may be included by the RPF to avoid deferred mitigation. CDFW is available to assist with development of protection measures.

# Appendix with Resources on Scoping and Evaluation

**Biogeographic Information and Observation System (BIOS)**: CDFW’s GIS interface for various environmental databases including CNDDB, Vegetation Community Mapping (incomplete), critical habitat for federally endangered species, and terrestrial significant habitats (meadows, emergent wetlands, ponds, riparian habitat). The BIOS viewer does not include information on plants with a CRPR of 3 or 4. Plant occurrence location data is available at the population level. (with some older records the location information is less fine-grained.) Some datasets on this tool are free, while access to others require a CNDDB subscription. <https://wildlife.ca.gov/Data/BIOS>

**California Native Plant Society (CNPS) inventories**: This website shares information on populations of plants tracked by CNPS, a nonprofit organization focused on preserving native plant diversity in California. Allows generation of scoping lists for plants based on California Rare Plant Rank (CRPR), federal protected status, or state protected status on a 1-quad or 9-quad level. Contains information on potential habitat (using the Holland and Sawyer 1986 habitat classification), number of existing populations, and bloom period. All plants with a CRPR can be viewed using map tools. Plant occurrence location data is available at the 7.5-minute quad resolution. This tool is free. <http://www.rareplants.cnps.org/>

**Calflora**: A nonprofit organization that provides a website with comprehensive information about plants that grow wild in California. It provides information on the distribution of plants throughout the state. Information is sourced from the California Consortium of Herbaria, CNPS inventories, iNaturalist, public agencies, non-profits, and direct reports to Calflora. Contains information on all plant species reported in an area regardless of status, as well as information on the potential habitat for those species (using the Munz community 1968 habitat classification), bloom period, local plant lists and maps of unusual soil substrate types. All plants that grow wild in California, including plants with a CRPR, can be viewed using map tools. Plant occurrence location data is provided at the population level although older occurrence data may be imprecise. This tool is free. <https://www.calflora.org/>

**California Consortium of Herbaria**: An organization that supports all herbaria in California by providing online access to information about plant collections. Information is sourced from California herbaria. Contains information about all plant species that have been collected by botanists throughout the state. Contains information on all plant species reported in an area regardless of status. All plants that grow wild in California, including plants with a CRPR, can be viewed using map tools. Plant occurrence location data is provided at the population level although older occurrence data may be imprecise. This tool is free. <https://ucjeps.berkeley.edu/consortium/>

**California Natural Diversity Database (CNDDB)**: CDFW’s inventory of the status and location of rare plants and animals in California. Information is sourced from CNDDB form submissions and information sharing agreements with other institutions. Contains information about all state-listed and federally-listed Threatened, Endangered, and Rare plants, as well as plant species with a California Rare Plant Rank (CRPR), Bureau of Land Management Sensitive plants, United States Forest Service Sensitive plants, and plants with a NatureServe rarity ranking of G3/S3 or lower. All plants with a CRPR are recorded in the database, but only plants with a state listing, federal listing, or CRPR of 1 or 2 are visible on the maps. Plant occurrence location data is provided at the population level although older occurrence data may be imprecise. Information on whether special status species have been found within a 7.5 minute quad is free, but specific location and population information requires an annual subscription or the purchase of map overlays for each 7.5-minute quad. <https://wildlife.ca.gov/Data/CNDDB>

**CNDDB’s Special Vascular Plants, Bryophytes, and Lichens List**: A list of plants (and mosses and lichens) tracked by the CNDDB for CDFW. Contains information on the species tracked by CNDDB including whether plants are state-listed and federally-listed Threatened, Endangered, and Rare, plant species with a California Rare Plant Rank (CRPR), Bureau of Land Management Sensitive plants, United States Forest Service Sensitive plants, and plants with a NatureServe rarity ranking of G3/S3 or lower. There is no plant occurrence location data. This tool is free.

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>

**Environmental Conservation Online System (ECOS)**: A website tracking U.S. Fish and Wildlife Service Threatened and Endangered Species and their critical habitats. Allows generation of scoping lists based on county. Contains information about federally-listed and candidate species, their habitat, conservation plans, range, and relevant biological opinions. Plant occurrence location data is available at the 7.5-minute quad resolution. This tool is free. <https://ecos.fws.gov/ecp/>

**Habitat Conservation Plans (HCPs)**: These plans, adopted pursuant to the federal Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.), conserve the ecosystems upon which listed species depend. HCPs near Plan areas will have comprehensive scoping information about potential special status plant species. Lands included in HCPs are frequently also included in NCCPs. These reports are publicly available.

**Natural Community Conservation Plans (NCCP)**: These agreements entered into pursuant to the Natural Community Conservation Planning Act (Fish and Game Code § 2800 et seq.) conserve the ecosystems upon which listed species depend as well as special natural communities. NCCPs near Plan areas will have comprehensive scoping information about potential special status plant species. Lands included in NCCPs are frequently also included in HCPs. These reports are publicly available.

**United States Department of Agriculture Web Soil Survey**: This service maps soil types and characters throughout the US. It can be used to determine if soil substrates that support specific special status plant species are present in the Plan area. This tool is free. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

**United States Geological Services National Geologic Map Database**: This service maps geologic features throughout the US. It can be used to determine if geologic substrates that support specific special status plant species are present in the Plan area. This tool is free. <https://ngmdb.usgs.gov/Prodesc/proddesc_333.htm>